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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,734	08/30/2001	Toshiaki Tarui	HITA.0101	6492

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EXAMINER

TANG, KENNETH

ART UNIT	PAPER NUMBER
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2195

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/941,734	Applicant(s) TARUI ET AL.	
	Examiner Kenneth Tang	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-13 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-13 and 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the RCE filed on 7/28/06. Claims 2-13 and 19-22 are presented for examination.
2. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 5, 7 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, in claims 5, 7, and 20, there is no support in the Specification for the newly amended limitation "independently from an allocation ratio of the CPUs set for each of the partitions".

Claim Rejections - 35 USC § 103

4. **Claims 2-5, 7-13, 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable by Kleinsorge et al. (USPN 6,226,734) (hereinafter Kleinsorge) in view of McColl et al. (USPN 6,763,519) (hereinafter McColl).**

5. As per claim 5, Kleinsorge teaches the invention as claimed, including a computer comprising:

one or more CPUs; a main memory; and one or more input/output means, wherein said computer is capable of being divided into a plurality of partitions (col. 6 lines 14-18; col. 12 lines 5-17),

said computer further comprises means for controlling allocation of the input/output means for each of the partitions (col. 7 lines 1-9, 15-19) by setting an input of the input/output means for each of the partitions independently from an input of the CPUs set for each of the partitions (col. 2, lines 53-61), means for monitoring input/output performance of said partitions (col. 4 line 59 - col. 5 line 3; col. 27 lines 36-51), means for prescribing an input of the input/output means for each of the partitions independently from an input of the CPUs set for each of the partitions (col. 2, lines 53-61, col. 7 lines 1-9), and means for automatically changing said prescribed input of the input/output means for each of the partitions without mediation of an operator when the input/output performance of said partition falls to a prescribed level set (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

6. McColl teaches the invention as claimed, including means for comparing processing input/output performance of each partition with a prescribed lower limit input/output of the partition according to SLA (Service Level Agreement) (col. 19 lines 13-56), means for determining whether said input/output is less than the lower limit level is caused by a CPU bound or an input/output bound according to CPU performance and input/output performance of the partition (col. 19 lines 13-56), and means for increasing input/output allocation to said partition when the input/output bound caused said level to drop to the lower limit capability and there is surplus in input/output performance of other partitions (col. 19 lines 13-56).

It would have been obvious to one of ordinary skill in the art to combine Kleinsorge and McColl since the provision of service levels allows simple reassignment of resources in a continuous manner. This allows the system to monitor performance and make adjustments on the fly or to allow a system administrator to make the adjustments. It would also have been obvious to one of ordinary skill the art to have the user/administrator inputs of the load balancing (col. 2, lines 14-15 and 53-61), be in a ratio or percentage format because it is a convenient way to control the balancing.

7. As per claim 7, Kleinsorge teaches the invention as claimed, including a computer comprising:

one or more CPUs; a main memory; and one or more input/output means, wherein said computer is capable of being divided into a plurality of partitions (col. 6 lines 14-18; col. 12 lines 5-17),

said computer further comprises means for controlling allocation of the input/output means for the partitions (col. 7 lines 1-9, 15-19).

8. McColl teaches the invention as claimed, including means for comparing input/output performance capability of each partition with a prescribed lower limit level of the partition according to SLA (Service Level Agreement) (col. 19 lines 13-56), means for determining whether said input/output performance is less than the lower limit level is caused by a CPU bound or an input/output bound according to CPU performance and input/output performance of the partition (col. 19 lines 13-56), and means for increasing input/output allocation to said partition when the input/output bound caused said capability to drop to the lower limit capability and there is surplus in input/output performance of other partitions (col. 19 lines 13-56).

9. It would have been obvious to one of ordinary skill in the art to combine Kleinsorge and McColl since the provision of service levels allows simple reassignment of resources in a continuous manner. This allows the system to monitor performance and make adjustments on the fly or to allow a system administrator to make the adjustments. It would also have been obvious to one of ordinary skill the art to have the user/administrator inputs of the load balancing (col. 2, lines 14-15 and 53-61), be in a ratio or percentage format because it is a convenient way to control the balancing.

10. As per claim 2, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for monitoring input/output performance of said partitions (col. 4 line 59 - col. 5 line 3; col. 27 lines 36-51).

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11. As per claim 3, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for an operator to instruct input/output allocation for each partition (col. 2 line 54 - col. 3 line 6; col. 27 lines 36-51; col. 27 line 65 - col. 28 line 21).

12. As per claim 4, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for booking input/output allocation for each partition (col. 23 lines 24-36; col. 23 line 53 - col. 24 line 12).

13. As per claim 8, McColl teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for recording, when the case is the input/output bound and no surplus of input/output performance is found in other partitions, that SLA has not been maintained, and means for reducing a charge billed to a user according to results recorded by said means for recording (col. 19 lines 13-56).

14. As per claim 9, McColl teaches the invention as claimed, including a computer as claimed in claim 2, further comprising means for transmitting the monitored result of the input/output performance to an external computer (col. 19 lines 13-56), and means for changing input/output allocation of said computer according to SLA as determined and requested by said external computer (col. 19 lines 13-56).

15. As per claim 10, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for changing input/output allocation of each partition in proportion to CPU allocation for said partition (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

16. As per claim 11, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, wherein input/output allocation for a partition is changed according to said means for monitoring performance of each partition, said monitored result, and conditions prescribed by a user (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

17. As per claim 12, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for interrupting communication conducted by a first partition after data of a prescribed size has been transmitted (col. 30 lines 39-44), means for changing over to communication that another partition requests after said interruption (col. 30 line 45 - col. 31 line 4), and means for resuming the communication of the first partition after the data of the prescribed size has been sent through the communication of said another partition (col. 31 line 54 - col. 32 line 7).

18. As per claim 13, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for dynamically changing an input/output adapter to which each partition can gain access (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

19. As per claim 18, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 2, wherein input/output allocation for a partition is changed according to said means for monitoring performance of each partition, said monitored result, and conditions prescribed by a user (col. 2 line 54 - col. 3 line 6; col. 8 lines 4-10; col. 10 lines 20-26).

20. As per claim 19, Kleinsorge teaches the invention as claimed, including a computer as claimed in claim 7, further comprising means for interrupting communication conducted by a first partition after data of a prescribed size has been transmitted (col. 30 lines 39-44), means for changing over to communication that another partition requests after said interruption (col. 30 line 45 - col. 31 line 4), and means for resuming the communication of the first partition after the data of the prescribed size has been sent through the communication of said another partition (col. 31 line 54 - col. 32 line 7).

21. As per claim 20, it is rejected for the same reasons as stated in the rejection of claim 5.

22. As per claim 21, Kleinsorge teaches wherein said monitored values of the input/output performance includes at least one of a latency before transmission, a quantity of data transmitted, a latency before receiving, and a quantity of data received (col. 32, lines 17-25).

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23. As per claim 22, is silent wherein said means for setting an allocation ratio sets a number of packets that each of the partitions is allowed to continuously send and receive. However, it would have been obvious to one of ordinary skill in the art to affect the packets transmitted to the partitions based on the setting of the allocation ratio because this will allow the load balancing based on the input.

24. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kleinsorge in view of McColl et al. (USPN 6,763,519) (hereinafter McColl), and further in view of Bauman et al. (6,279,098) (hereinafter Bauman).**

25. As per claim 6, Bauman teaches the invention as claimed, including a computer as claimed in claim 5, further comprising means for recording time used by a user for having increased input/output allocation for partitions (col. 1 lines 51-61) and means for billing additional charge to the user of said partition according to results recorded by said means for recording (col. 1 lines 51-61).

26. It would have been obvious to one of ordinary skill in the art to combine Kleinsorge and Bauman since the redistribution of processing resources allows larger tasks to take on a larger portion of a system's resources while taking away excess resources from smaller resources. Thus, the system can make the most efficient use of its limited resources, thereby improving performance.

Response to Arguments

27. Applicant's arguments have been fully considered but are moot in view of the new grounds of rejections. Applicant is directed to the rejections above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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